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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/782,215 | 02/19/2004 | James A. McClain | 030900 | 5338 |

41835 7590 03/02/2005

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EXAMINER

WARD, PAUL V

ART UNIT PAPER NUMBER

1623

DATE MAILED: 03/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

4C

Office Action Summary

Application No.

10/782,215

Applicant(s)

MCCLAIN, JAMES A.

Examiner

PAUL V. WARD

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1623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment filed January 26, 2005, Regarding

Claim Rejections - 35 USC § 112

1. The rejections of claims 1, 13, 14, 24, and 27 under 35 U.S.C. 112, second paragraph, have been overcome by Applicant's amendment.

Response to Amendment filed January 26, 2005, Regarding

Claim Rejections - 35 USC § 102

2. **Status.** The rejection of claims 1-27 under 35 U.S.C. 103 set forth in the Office Action dated November 2, 2004 has been maintained for the reasons of record and for the reasons set forth herein.

Applicant's arguments, filed January 26, 2005, have been fully considered but they are not persuasive.

Applicant asserts that Ohkuma discloses a dextrin containing 50% of 1→4 glycosidic linkages with at least 60% of indigestible component diminished in color substance or stimulative odor, and that the dextrin is prepared by heat-treating corn starch with the addition of an acid, and thus, argues that Ohkuma does not teach a process of forming a resistant starch that includes acidifying unmodified starch to a pH, wherein the pH is optimum to convert the unmodified starch to resistant starch when at the reaction temperature. Applicant further argues that Ohkuma does not disclose a process for forming a resistant starch wherein the whiteness level is maintained between about 50 and about 100.

Applicant's argument that Ohkuma fails to teach a process of forming a resistant starch that includes acidifying unmodified starch to a pH, wherein the pH is optimum to convert the unmodified starch to resistant starch when at the reaction temperature is inexact and misplaced.

Ohkuma discloses a method for producing a resistance starch by selecting the reaction temperature, acidifying the starch with HCl, heating the acidified starch to the reaction temperature, and maintaining the acidified starch close to the reaction temperature to avoid coloring. (See Col. 5, line 50 to Col. 6 line 65). Additionally, in column 23, line 37, Ohkuma emphasizes that the white decreased in inverse proportion to the heating temperature or heating time, and figures 2 and 3 demonstrate that the degree of coloration at pH 4.5 is lower than the degree in a reaction at pH 6.5. Further, Ohkuma clearly shows that resistant starch maintains a "whiteness" level between 12.3 and 66 when measured with a photoelectric whiteness meter. (See Example 5 and Figures 2 and 3).

Additionally, it should be noted that Ohkuma teaches an indigestible dextrin, which are substances that are not digested or absorbed by the small intestine or digestive tract. Thus, these indigestible dextrans are considered to be identical to resistant starch.

It is apparent that Ohkuma teaches the same method for producing resistant starch by selecting a reaction temperature, acidifying the starch, heating the starch to the same reaction temperature range of 120-200 C (preferably 140-180 C), and maintaining the acidified starch close to the reaction temperature to avoid coloring.

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Thus, Applicant's claims are anticipated, and the rejection of the claims under 35 U.S.C. 102(b) is maintained for the reasons of record as set forth in the Office Action dated November 2, 2004.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkuma et al (U.S. Patent 5358729) in view of Bulfer et al (U.S. Patent 2,287,599).

Ohkuma teaches a method for producing a resistant starch by (1) selecting a reaction temperature, (2) acidifying the starch, (3) heating the acidified starch to the reaction temperature, and (4) maintaining the acidified starch close to the reaction temperature to avoid coloring. (See Abstract and col. 1, lines 6-10). In column 6, line 41, Ohkuma teaches that HCl is used to acidify the starch. Additionally, in column 23,

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line 37, Ohkuma emphasizes that the whiteness decreased in inverse proportion to the heating temperature or heating time, and figures 2 and 3 demonstrate, from a comparative analysis, that the degree of coloration at pH 4.5 is lower than the degree in a reaction at pH 6.5. Further, in Table 13, Ohkuma discloses a whiteness level ranging from 12.3 to 66. (See Example 4). Still further, Ohkuma states, in column 6, line 66, that the reaction temperature is 120-200 C, and "more preferably 140-180 C", and in Example 5, column 31, Ohkuma employs a starch having a moisture content of 5%. Moreover, Ohkuma teaches that the resistant starch recovered is in an increased amount of at least 60%. (See column 5, line 7-10).

Ohkuma does not teach a whiteness level above 66.

Bulfer teaches a method for producing resistant starch having a whiteness level of 80-90% using chlorine gas at an optimum pH of 2.7 and having the reaction temperature range of 94-177. (See col. 1 line 30-35, and col. 2-col. 3). The technical features, such as pH, temperature, time and whiteness are described, which provides the same advantages as Applicant. (See col. 2-col. 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the methods Ohkuma to produce resistant starch by including a means to generate whiteness as suggested by Bulfer with a reasonable expectation of success. The motivation to do so is provided by Ohkuma to produce resistant starch and the teaching of Bulfer who teach the usefulness of including a method to improve whiteness. Thus, the combined references teach and suggest all of

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the claim limitations. Therefore, the claimed invention as a whole is obvious over the combined teachings of the prior art.

Conclusion

Claims 1-27 are pending. Claims 1-27 are rejected. No claims are allowed. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

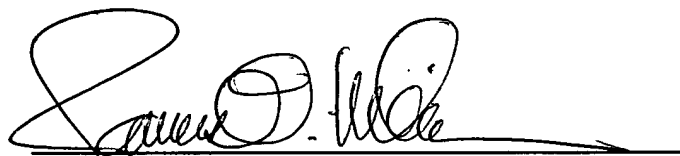
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL V. WARD whose telephone number is 571-272-2909. The examiner can normally be reached on M-F 8 am to 4 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James O. Wilson can be reached on 571-272-0661. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



James O. Wilson
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